

WHAT IS CLAIMED IS:

1. A communication system for controlling optical communication, the system comprising:

5 a sending unit including:

supervisory signal sending control means for controlling the sending of a supervisory signal for having supervisory control of optical communication and a drive supervisory signal for controlling the driving of an optical fiber amplifier for performing optical amplification by using a non-linear optical phenomenon in an optical fiber, and

10 sending stop means for receiving a stop signal and for stopping the sending of the drive supervisory signal; and

a receiving unit including:

the optical fiber amplifier, drive control means for receiving the drive supervisory signal and for controlling the driving of the optical fiber amplifier, and

20 stop signal sending means for sending the stop signal to the sending unit after the optical fiber amplifier being driven.

25 2. The communication system according to claim 1, wherein the supervisory signal sending control means sets the transmission rate of the drive supervisory signal to a

small value and sends the drive supervisory signal so that the drive supervisory signal can be received in a state in which the optical fiber amplifier is not operating.

5 3. The communication system according to claim 2,
wherein the supervisory signal sending control means
includes a source of the supervisory signal and a source
of the drive supervisory signal which are separate from
each other and performs the simultaneous or switching
10 sending of the supervisory signal and the drive
supervisory signal the transmission rates of which are
different from each other.

 4. The communication system according to claim 2,
15 wherein the supervisory signal sending control means uses
one signal source which can control a transmission rate
variably to perform the switching sending of the
supervisory signal and the drive supervisory signal the
transmission rates of which are different from each other.

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 5. The communication system according to claim 1,
wherein the supervisory signal sending control means sets
the wavelength of the drive supervisory signal to a value
being within the range of an empty band in a transmission
25 band for a main optical signal and sends the drive
supervisory signal.

6. The communication system according to claim 5,
wherein the supervisory signal sending control means
includes a source of the supervisory signal and a source
of the drive supervisory signal which are separate from
5 each other and performs the simultaneous or switching
sending of the supervisory signal and the drive
supervisory signal the wavelengths of which are different
from each other.

10 7. The communication system according to claim 5,
wherein the supervisory signal sending control means uses
one signal source which can control a wavelength variably
to perform the switching sending of the supervisory signal
and the drive supervisory signal the wavelengths of which
15 are different from each other.

8. The communication system according to claim 1,
wherein the supervisory signal sending control means
amplifies only the drive supervisory signal and sends the
20 drive supervisory signal so that the drive supervisory
signal can be received in a state in which the optical
fiber amplifier is not operating.

9. A sending apparatus for controlling sending in
25 optical communication, the apparatus comprising:

supervisory signal sending control means for
controlling the sending of a supervisory signal for having

supervisory control of optical communication and a drive
supervisory signal for controlling the driving of an
optical fiber amplifier for performing optical
amplification by using a non-linear optical phenomenon in
5 an optical fiber; and

sending stop means for receiving a stop signal and
for stopping the sending of the drive supervisory signal.

10. A receiving apparatus for controlling receiving
10 in optical communication, the apparatus comprising:

an optical fiber amplifier for performing optical
amplification by using a non-linear optical phenomenon in
an optical fiber;

drive control means for controlling the driving of
15 the optical fiber amplifier; and

stop signal sending means for sending a stop signal
to a unit on the sending side after the optical fiber
amplifier being driven.